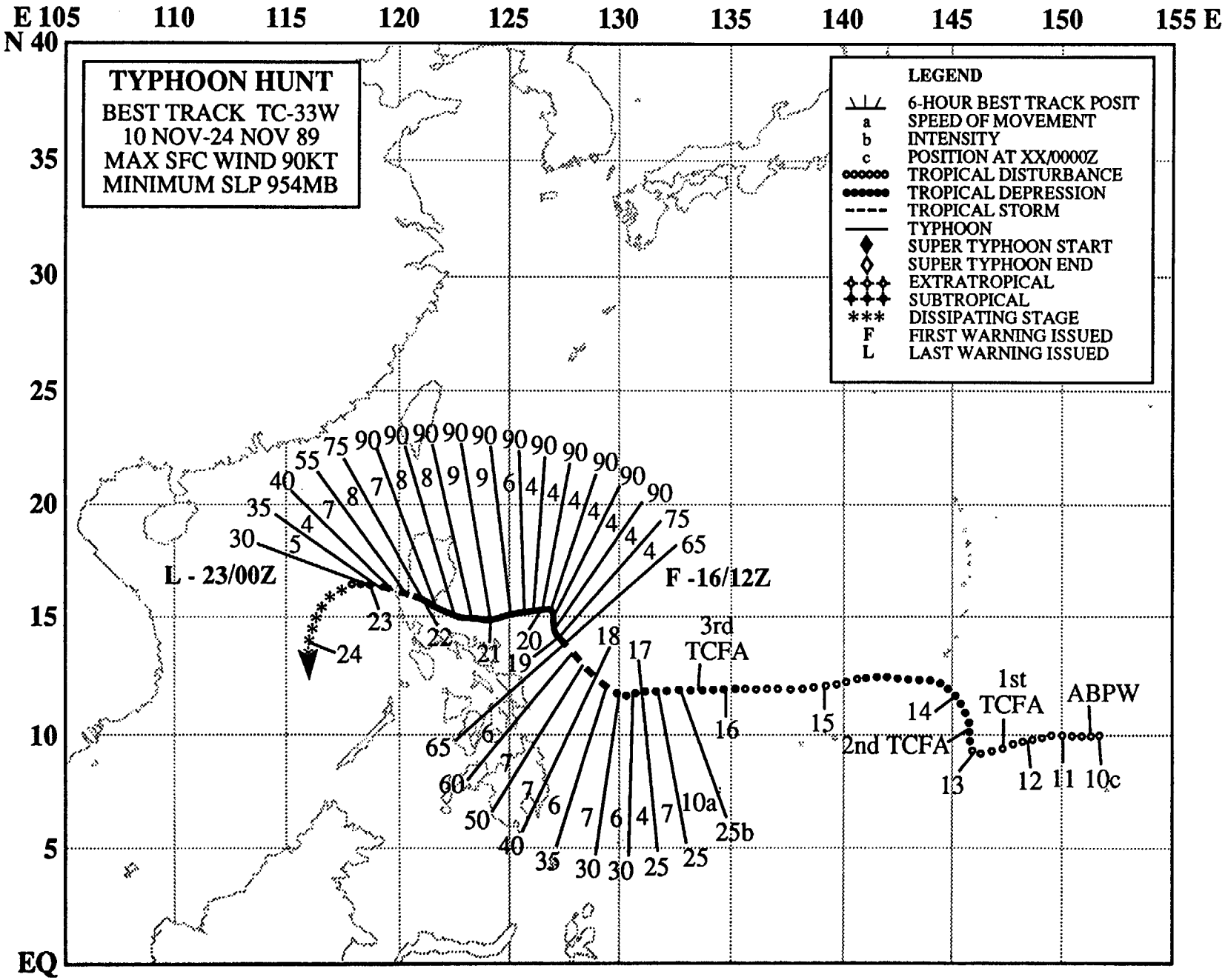
E 105
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EQ
TYPHOON HUNT
BEST TRACK TC-33W
10 NOV-24 NOV 89
MAX SFC WIND 90KT
MINIMUM SLP 954MB
LEGEND
6-HOUR BEST TRACK POSIT
a SPEED OF MOVEMENT
b INTENSITY
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
*** DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED
L - 23/00Z
F -16/12Z
3rd TCFA
1st TCFA
2nd TCFA
ABPW

TYPHOON HUNT (33W)

Typhoon Hunt was the fourth typhoon, following Angela (26W), Dan (29W) and Elsie (30W), to strike the Philippine Islands within six weeks. Generally a westward moving system, it was slow to develop, but finally intensified rapidly in the western Philippine Sea. As it intensified and approached the Philippines, it underwent a northwestward "stair step" before resuming a westward course into central Luzon. Unlike Angela (26W), Dan (29W) and Elsie (30W) which reintensified after crossing Luzon, Hunt weakened dramatically and dissipated in the South China Sea.

Except for Typhoon Gay (32W), early November was relatively inactive in the western North Pacific. The cloud cluster that became Typhoon Hunt was first identified on the 10 November Significant Tropical Weather Advisory. This system was a weak tropical disturbance embedded in the monsoon trough north of the island of Truk in the central Caroline Islands. The cloud cluster remained poorly defined and drifted slowly westward for two days. After synoptic data indicated falling surface pressures, JTWC issued a Tropical Cyclone Formation Alert at 121000Z. The disturbance was located 270 nm (500 km) southeast of Guam. As the passage of a mid-latitude trough to the northeast of Guam weakened the mid-level subtropical ridge. On 13 November, the disturbance executed an abrupt track change to the north towards Guam. The Alert was reissued at 131000Z, approximately 220 nm (405 km) south-southeast of Guam.

The system moved northward for a day, then turned sharply westward, passing 90 nm (165 km) south of Guam. Increasing vertical shear weakened the convection significantly, and the Alert was canceled at 140400Z. On 16 November, the organization of the disturbance improved, as southwesterly winds of 20 to 30 kt (10 to 15 m/sec) were reported by ships and land stations. JTWC issued its third Alert on the system at 160730Z.

Continued organization led to the first warning on Tropical Depression 33W at 161200Z. In response to a mid-latitude trough passage to the north, the depression appeared to slow and then dip southward for six hours. As the trough moved out to the northeast, the 500 mb ridge remained very narrow but split into two cells, one to the northwest of the tropical cyclone and another to the northeast. A broad col area remained north of the tropical depression which then moved northwestward towards this weakness.

At 180000Z, the depression was upgraded to Tropical Storm Hunt with maximum sustained winds of 35 kt (18 m/sec). Hunt intensified rapidly while moving northwestward and was upgraded to a typhoon at 181800Z. JTWC continued to forecast movement over Luzon and predict the system would enter the South China Sea just south of Manila Bay. This was based on NOGAPS prognostic fields which indicated that the narrow 500 mb ridge would reestablish and maintain itself to the north of the system, thus forcing a westward track. At the same time, a strong 850 mb ridge of continental polar air associated with the winter monsoon extended eastward from southern China. This was also expected to block Hunt's northward progression. However, the NOGAPS forecast series proved to be too fast at reestablishing the ridge and Hunt turned northward toward the weakness in the ridge.

At this time, the typhoon also slowed to 4 kt (7 km/hr). Now JTWC and U.S. forces from the Philippines to Okinawa faced the dilemma of having a destructive system either affect forces in the Philippines should Hunt make only a "stair step," or in Okinawa, should it recurve. Because weak mid-latitude troughs, embedded in the predominantly zonal flow, continued to pass north of the tropical cyclone, and the prognostic series continued to build the

narrow 500 mb ridge as a barrier to Hunt's continued northward movement, JTWC persisted with its forecast of westward movement.

At 091500Z Typhoon Hunt, with its 90-kt (46-m/sec) maximum sustained winds, turned sharply to the west toward central Luzon as the 500 mb ridge to the system's northeast built westward and strengthened. Hunt remarkably maintained its 90-kt (46-m/sec) intensity for 66 continuous hours before moving ashore in central Luzon at 212000Z (Figure 3-33-1). Army personnel involved in the joint-combined U.S.-Philippine exercise, BALIKATAN 89, were deployed to Fort Magsaysay near Clark AB. The Weather Support Force for the exercise reported peak winds of 52 kt (27 m/sec) at 212200Z when Hunt was 40 nm (75 km) northeast of its location. As the typhoon crossed Luzon, it killed at least seven Filipino people. Damage to military installations was slight.

Hunt was downgraded to a tropical storm at 220600Z as it entered the Lingayen Gulf. The northeast monsoon was of moderate strength in the South China Sea, and Hunt, despite moving over warm water, continued to weaken due to strong vertical wind shear. Deep convection had completely subsided by 230000Z when Hunt was downgraded to a tropical depression and the final warning was issued. The remains of the low-level circulation, although not visible on satellite imagery, were last discernible on synoptic charts at 240000Z drifting southward in the monsoonal flow.

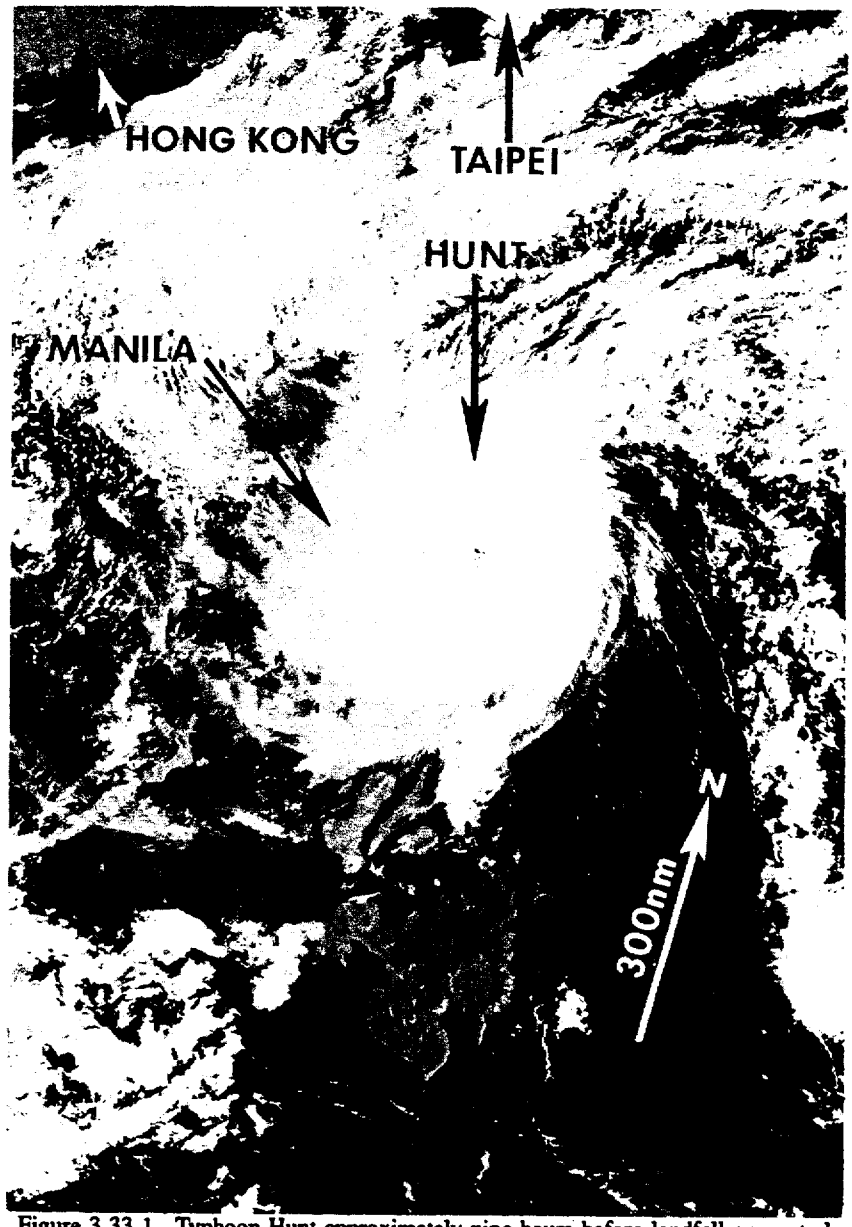

Figure 3-33-1. Typhoon Hunt approximately nine hours before landfall on central Luzon. Maximum sustained winds are estimated at 90 kt (46 m/sec) (211130Z November DMSP visual imagery).